



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,714	08/06/2001	Yasuharu Yoshida	Q65726	8770

7590 06/09/2006

SUGHRUE, MION, ZINN, MACPEAK & SEAS  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

EXAMINER
----------

GENACK, MATTHEW W

ART UNIT	PAPER NUMBER
----------	--------------

2617

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

### Office Action Summary

Application No.

09/921,714

Applicant(s)

YOSHIDA, YASUHARU

Examiner

Matthew W. Genack

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando, U.S. Patent No. 6,275,552, in view of Wiatrowski *et. al.*, U.S. Patent No. 5,806,002.

Regarding Claims 1 and 8, Ando discloses a method and system for data communications between roadside equipment and a vehicle's on board equipment using the dedicated short-range communication protocol for the purpose of collecting tolls (Abstract, Column 6 Lines 58-67, Figs. 1 and 6). A link is established between roadside equipment and the vehicle's on board equipment at one of a set of frequencies that may be selected from, switching between said frequencies being possible (Column 5 Lines 37-42, Figs. 2-3).

Ando does not expressly disclose searching means by which the vehicle's on board equipment searches frequencies used by the roadside equipment, wherein said searching comprises a cyclical switching of radio frequencies whereby radio frequencies

for one type of communication are searched for a larger fraction of said cycle than the fraction associated with frequencies for another type of communication.

Wiatrowski *et. al.* discloses a method of priority frequency scanning by a communication unit, said communication unit capable of being associated with an automobile (Abstract, Column 2 Lines 28-35, Fig. 1). A scanning algorithm is used whereby a receiver spends time scanning frequencies for one type of communication (priority) and frequencies for another type of communication (non-priority) (Column 2 Lines 36-44). The scanning algorithm comprises cyclically switching between frequencies for two types of communication, whereby the receiver is tuned to frequencies for one type of communication for a fraction of a cycle that is greater than the fraction of a cycle that the receiver is tuned to frequencies for the other type of communication (Fig. 2).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Ando by providing for the cyclical switching amongst frequencies transmitted by the roadside equipment, said cyclical switching involving the vehicle's receiver being tuned to frequencies associated with one type of communication for a fraction of a cycle that is greater than the fraction of a cycle that the receiver is tuned to frequencies for the another type of communication.

One of ordinary skill in the art would have been motivated to make this modification because of the enhancement in efficiency in causing the vehicle's receiver to spend a greater amount of time searching for frequencies associated with a type of communication that is high priority, or difficult to receive, than the period of time spent

searching for a frequency associated with a type of communication that is low priority, or easy to receive.

Regarding Claims 2 and 9, Wiatrowski *et. al.* discloses that the communication unit of the invention may participate in both high-speed and low-speed links (Column 9 Lines 31-44).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by assigning frequencies dedicated to a high-speed link to the fraction of a cycle that is greater, and assigning the other frequencies, dedicated to a low-speed link, the lesser fraction of the cycle (given the need for the vehicle's communication equipment to engage in a high-speed link and a low-speed link).

One of ordinary skill in the art would have been motivated to make this modification because the scanning for and establishment of a high-speed link is more difficult than the scanning for and establishment of a low-speed link by the communication equipment in a moving vehicle.

Regarding Claims 3 and 10, Wiatrowski *et. al.* discloses that the communication unit of the invention may participate in both high-speed and low-speed links (Column 9 Lines 31-44), and the practice of searching some frequencies more often than other frequencies (Fig. 2B).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing the means for

more frequent searching of frequencies associated with a high-speed link than frequencies associated with a low-speed link.

One of ordinary skill in the art would have been motivated to make this modification because by searching for frequencies associated with the high-speed link more often, there is a higher probability that said high-speed link will be initiated and the necessary information exchanged in the time before said link is eventually broken.

Regarding Claims 4 and 11, Wiatrowski *et. al.* discloses the use of various modulation types and the detection thereof by the communication unit (Column 2 Lines 28-33, Column 6 Lines 62-67, Column 7 Lines 34-41, Column 9 Lines 1-26, Fig. 4), and as a consequence, the use of various demodulation methods by the communication unit's receiver when said receiver switches between radio frequencies associated with different modulation types.

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing means to switch the demodulation method employed by the receiver of the vehicle's communication equipment when said receiver switches frequencies.

One of ordinary skill in the art would have been motivated to make this modification because different frequencies may be associated with different modulation methods.

Regarding Claims 5 and 12, Wiatrowski *et. al.* discloses the division into talk groups of the frequencies used by the communication unit (Column 2 Lines 28-33 and 60-63, Column 9 Lines 1-26).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by dividing, *a priori*, the frequencies into various groups and to conduct searches by cyclically frequencies in a given group.

One of ordinary skill in the art would have been motivated to make this modification because there may be instances in which either the user or the vehicle's equipment is aware of their presence in a given short range communication zone that only uses frequencies pertaining to a certain group, and the search for the proper frequency may be thus expedited by only scanning frequencies belonging to this group.

Regarding Claims 6 and 13, Wiatrowski *et. al.* discloses the possibility that one talk group is identical to a second talk group (Column 2 Lines 63-67).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to further modify the invention of Ando by providing for talk groups that overlap.

One of ordinary skill in the art would have been motivated to make this modification because of the potential for conserving the use of frequency spectrum via the reuse of frequencies in two or more groups (and groups associated with separate pieces of roadside separated from one another geographically), which is made possible by the short range nature of the system of the invention.

Regarding Claim 7, Ando discloses the presence of vehicle dedicated short range communication equipment and roadside dedicated short range equipment (Column 6 Lines 58-67, Figs. 1 and 6).

***Response to Arguments***

4. Applicant's arguments filed 24 March have been fully considered but they are not persuasive.

Regarding Applicant's assertion, on Page 9, that "In Fig. 2A the percentage (ratio) of the scan cycle spent on the first (priority) type of communication is equal to the percentage (ratio) of the scan cycle spent on the second (non-priority) type of communication, ( $R1=R2$ ).\" Examiner directs Applicant's attention to the fact that, in Fig. 2A, channel 1 is a priority channel, while channels 2-4 are non-priority channels. Though each of channels 1-4 is scanned for an equal fraction of a scan cycle, the fraction of a scan cycle spent scanning non-priority channels (that is, channels 2-4) is equal to three-fourths, which is not equal to the fraction of the cycle allotted to scanning the priority channel (channel 1), which is equal to one-fourth. With regard to Claims 1 and 8, non-priority may be considered to be the first type of communication, and priority may be considered to be the second type of communication (the assignment of the respective labels of "first type" and "second type" being completely arbitrary) and thus the ratio of the scan cycle spent on the first type of communication is larger than the ratio of the scan cycle spent on the second type of communication during the "no activity" portion of Fig. 2A. With regard to the remainder of Applicant's arguments, Examiner reiterates the fact that the assignment of the respective labels of "first type" and "second type" is completely arbitrary, as Claims 1 and 8 essentially require unequal duty cycle scans for two types of communication.



***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Genack whose telephone number is 571-272-7541. The examiner can normally be reached on FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7541.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew Genack

Examiner

TC-2600, Division 2617



2 June 2006

  
**DUC NGUYEN**  
**PRIMARY EXAMINER**